



# ENVIRONMENTAL MONITORING REPORT, AUGUST 2020

## PARRAMATTA LIGHT RAIL INFRASTRUCTURE WORKS

4 September 2020

**Parramatta**  
Connect

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| 1           | 4 September 2020 | O. Cooper          | D. Corish          | D. Corish          | Update in response to ER and AA comments                |



# 1. Introduction

## 1.1. Background

Parramatta Light Rail Stage 1 ('Stage 1') will connect Westmead to Carlingford via Parramatta Central Business District (CBD) and Camellia. Stage 1 is expected to be operational in 2023.

Stage 1 will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, the new Western Sydney Stadium, the Camellia Town Centre, the new Powerhouse Museum and Riverside Theatre arts and cultural precinct, the private and social housing redevelopment at Telopea, the Rosehill Gardens Racecourse and the three Western Sydney University campuses.

Key features of Stage 1 include:

- A new dual track light rail network of approximately twelve (12) kilometres in length, including approximately seven (7) kilometres within the existing road corridor and approximately five (5) kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services
- Sixteen (16) stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford
- High frequency 'turn-up-and-go' services operating seven days a week from 5am to 1am. Weekday services will operate approximately every 7.5 minutes in the peak period between 7am and 7pm
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers.
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street)
- A Stabling and Maintenance (SaM) Facility located in Camellia for light rail vehicles to be stabled, cleaned and maintained
- New bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows
- Relocation and protection of existing utilities
- Public domain and urban design works along the corridor and at Stop precincts
- Closure of the heavy rail line between Carlingford and Clyde
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts
- Integration with the Opal Electronic Ticketing System (ETS)
- Real time information in light rail vehicles and at Stops via visual displays and audio.



### 1.1.1. Statutory Context

The Parramatta Light Rail is classified as Critical State Significant Infrastructure (CSSI) and was subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS assessed impacts for Parramatta Light Rail Stage 1 (Westmead to Carlingford) including the light rail and associated road enabling works.

Stage 1 received Infrastructure Approval from the Minister for Planning under Section 5.19 of the EP&A Act on 29 May 2018 (Critical State Significant Infrastructure Application SSI-8285), subject to the conditions provided in the Instrument of Approval, specifically Schedule B – Ministerial Conditions of Approval.

The Infrastructure Approval was subsequently modified under Section 5.25 of the EP&A Act on 21 December 2018 and 25 January 2019.

The planning approval, modifications and related environmental assessment documents are located at: [http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=8285](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285).

A Construction Environmental Management Plan (CEMP) has been prepared for the Parramatta Light Rail Package 4 – Infrastructure Works (Infrastructure Works). The purpose of the CEMP and associated Sub-plans is to address the requirements of the:

- Minister’s Conditions of Approval (CoA) SSI-8285
- Revised Environmental Mitigation and Management Measures (REMMMs)
- Environmental Performance Outcomes (EPOs)
- Applicable legislation and contractual requirements, including the PLR Stage 1 Infrastructure Contract Project Deed (ISD-17-6721).

The REMMMs and EPOs are listed in Parramatta Light Rail Stage 1 Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement (the EIS), as amended by the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report) (March 2018) (the SPIR). The CEMP and associated Sub-plans were approved the Secretary on the 21 November 2019.

## 1.2. Scope

The scope of this report is to present monthly results of the inspection and monitoring programs outlined in the Infrastructure Works CEMP and associated Sub-plans, including the results of the construction monitoring programs referred to in Condition C9 of the Planning Infrastructure Approval.

Environmental inspections and monitoring are undertaken to:

- Validate the predicted impacts of the Infrastructure Works
- Measure the effectiveness of environmental controls
- Track progress against targets and objectives of the CEMP.

The monitoring requirements for nominated aspects are included in the relevant environmental management sub plans and summarised in **Table 1-1**.

Where relevant, data will be presented on a progressive basis (i.e. monthly summary) to identify trends.

The data of the monitoring programs will also be reviewed annually in the Annual Environment Reports.



**Table 1-1 Monthly Environmental Monitoring Reporting Requirements**

| <b>CEMP or Sub-plan</b>                                       | <b>Monitoring program</b>  | <b>Distribution</b>  |
|---|--|--|
| Noise and Vibration Management Sub-plan                       | <ul style="list-style-type: none"> <li>- Locations and descriptions of monitoring undertaken</li> <li>- Noise monitoring results</li> <li>- Summary of any exceedance of the nominated criteria</li> <li>- Corrective actions</li> </ul> | <ul style="list-style-type: none"> <li>- City of Paramatta Council</li> <li>- Cumberland Council</li> <li>- EPA</li> <li>- NSW Health</li> <li>- TfNSW</li> <li>- IC</li> <li>- ER</li> <li>- AA</li> <li>- Made publicly available</li> </ul> |
| Soil and Water Management Sub-plan                            | <ul style="list-style-type: none"> <li>- Weather forecasts and observations</li> <li>- Water Quality (Turbidity) monitoring</li> <li>- Discharge and dewatering monitoring</li> </ul>  | <ul style="list-style-type: none"> <li>- City of Paramatta Council</li> <li>- Cumberland Council</li> <li>- EPA</li> <li>- DOI Water</li> <li>- TfNSW</li> <li>- IC</li> <li>- Made publicly available</li> </ul>                              |
| Air Quality and Dust Management Sub-plan                      | <ul style="list-style-type: none"> <li>- Weather observations</li> <li>- Dust deposition monitoring</li> <li>- Real time aerosol dust monitors</li> <li>- Asbestos fibre air monitoring</li> </ul>                                       | <ul style="list-style-type: none"> <li>- EPA</li> <li>- TfNSW</li> <li>- IC</li> <li>- Made publicly available</li> </ul>  |
| Grey-headed Flying-fox (GHFF) Construction Monitoring Program | <ul style="list-style-type: none"> <li>- Weekly visual checks of GHFF camp during high risk periods (1 September to 31 January)</li> </ul>   | <ul style="list-style-type: none"> <li>- TfNSW</li> </ul>  |



## 2. Site Activities

Table 2-1 provides a summary of the site activities for August 2020.

Table 2-1 Site Activities During Reporting Period

| Precinct                      | Site Activities  |
|-------------------------------|--|
| Westmead and North Parramatta | <ul style="list-style-type: none"><li>General utility relocations in Westmead and North Parramatta (Jemena, Sydney Water and Endeavour Energy).</li></ul>  |
| Parramatta CBD                | <p><b>Area 2 West (CBD)</b></p> <ul style="list-style-type: none"><li>General utility relocations (Telstra, Jemena, Sydney Water and Endeavour Energy) were undertaken on Church Street, George Street and Smith Street.</li><li>Electrical and lighting works commenced in the CBD including the footings for multifunction poles.</li><li>Tunnel Boring Machine continued to progress the installation of the micro-tunnel below Church Street</li></ul> <p><b>Area 2 East (Smith Street to Arthur Street)</b></p> <ul style="list-style-type: none"><li>General utility relations (Jemena, Sydney Water and Endeavour Energy) on Harris Street, Macquarie Street, George Street and Purchase Street.</li><li>Archaeological salvage works at Robin Thomas Reserve</li><li>Traffic Management Plan implementation on Tramway Avenue.</li></ul> |
| Camellia and Carlingford line | <p><b>Camellia</b></p> <ul style="list-style-type: none"><li>Drainage works and connection of utilities at Grand Avenue North and Tramway Avenue.</li><li>Ongoing deep excavation for sewer at Camellia Junction.</li><li>Piling at Tramway Avenue for James Ruse Drive underbridge.</li></ul> <p><b>Carlingford Line</b></p> <ul style="list-style-type: none"><li>Foundation treatment for Camellia retaining wall.</li><li>James Hardie Underpass plank installation.</li><li>Camellia Bridge piling.</li><li>Foundation treatment at Rydalmere.</li><li>Retaining wall works from Rydalmere to Carlingford.</li><li>Utility investigations and ongoing utility location works.</li></ul>   |



## 3. Monitoring Results

Section 3 presents a summary of the environmental inspection and monitoring programs completed during the reporting period (26 July 2020 to 25 August 2020). Detailed monitoring results for each program are presented in the appendices to this report.

### 3.1. Inspections

A total of four ER inspections and two AA inspections were completed during the reporting period in addition to 41 internal inspections. **Table 3-1** provides a summary of the number of actions raised and closed within the agreed timeframe.

**Table 3-1 Inspections for August 2020**

| Date       | Number of Inspections | Type                | Actions | Closed in Time |
|------------|-----------------------|---------------------|---------|----------------|
| 27/07/2020 | 10                    | Internal Inspection | 5       | Yes            |
| 29/07/2020 | 2                     | Internal Inspection | 2       | Yes            |
| 31/07/2020 | 1                     | Internal Inspection | 0       | N/A            |
| 02/07/2020 | 1                     | ER Inspection       | 6       | Yes            |
| 03/08/2020 | 3                     | Internal Inspection | 5       | Yes            |
| 04/08/2020 | 1                     | ER Inspection       | 4       | Yes            |
| 05/08/2020 | 1                     | Internal Inspection | 2       | Yes            |
| 05/08/2020 | 1                     | AA Inspection       | 2       | Yes            |
| 06/08/2020 | 11                    | Internal Inspection | 12      | Yes            |
| 07/08/2020 | 1                     | Internal Inspection | 1       | Yes            |
| 10/08/2020 | 10                    | Internal Inspection | 2       | Yes            |
| 12/08/2020 | 3                     | Internal Inspection | 6       | Yes            |
| 13/08/2020 | 1                     | AA Inspection       | 2       | Yes            |
| 13/08/2020 | 1                     | ER Inspection       | 9       | Yes            |
| 14/08/2020 | 3                     | Internal Inspection | 5       | Yes            |
| 18/08/2020 | 1                     | ER Inspection       | 9       | Yes            |
| 20/08/2020 | 2                     | Internal Inspection | 0       | N/A            |
| 21/08/2020 | 3                     | Internal Inspection | 4       | Yes            |
| 21/08/2020 | 1                     | AA Inspection       | 4       | Yes            |
| 24/08/2020 | 1                     | Internal Inspection | 2       | Yes            |





|              |           |          |           |          |
|--------------|-----------|----------|-----------|----------|
| <b>Total</b> | <b>61</b> | <b>-</b> | <b>78</b> | <b>-</b> |
|--------------|-----------|----------|-----------|----------|

## 3.2. Weather

The total rainfall during the reporting period was 186.8 mm with 9 days with >1mm of rain with two days exceeding the 80<sup>th</sup> percentile (25.8mm) and one day exceeding the 85<sup>th</sup> percentile (33.1mm).

During the reporting period, there were 19 days where the maximum wind gust recorded was greater than 25km/hr and seven days where the maximum wind gust recorded was greater than 50km/hr. There was a total of 26 days where wind speeds greater than 25km/hr were forecast and on each of those days, notifications were issued to the construction team to alert them of the strong winds forecast.

A summary of the weather observations and weather events during the reporting period of relevance to the Soil and Water Management Sub-plan and Air Quality Management Sub-Plan Trigger Action Response Plans (TARPs) are summarised in **Table 7-2**. A comparison between long term monthly means and recorded values can be found in **Figure 3-2**.

Detailed weather observation records for August 2020 are presented in **Appendix A-1**.

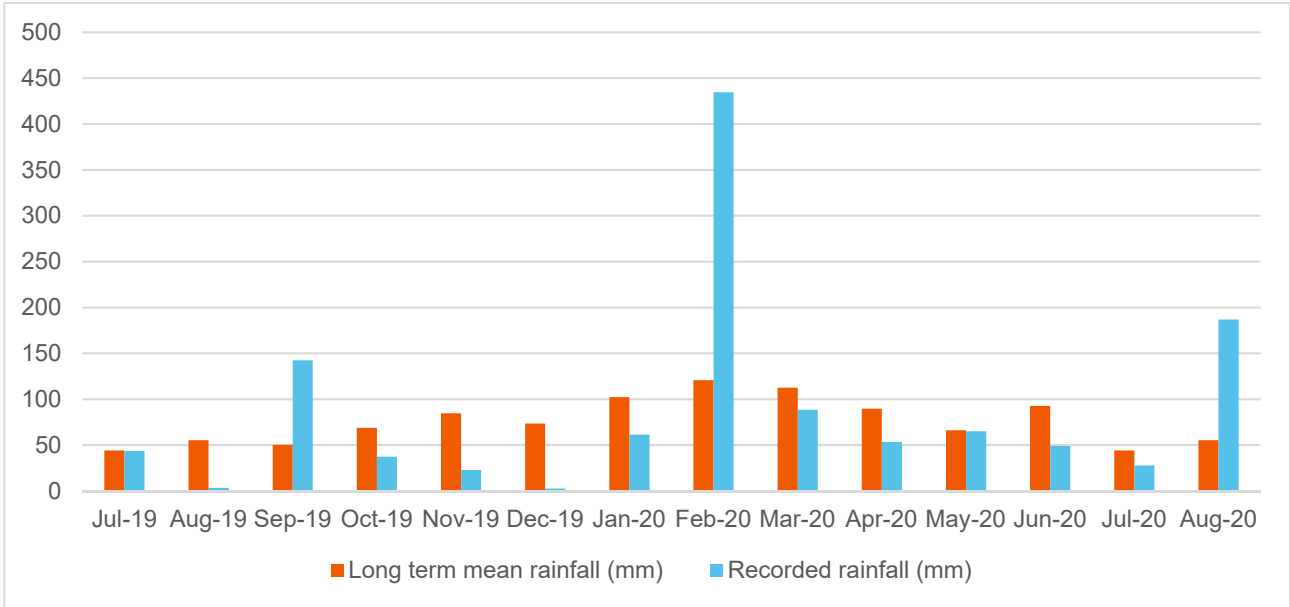
**Table 3-2 Weather Summary and Trigger Weather Events for August<sup>1</sup> 2020**

| Weather event                                     | Forecast | Observation |
|---|----------|-------------|
| Minimum temperature                               | 3°C      | 3.2°C       |
| Maximum temperature                               | 23°C     | 22.4°C      |
| Total rainfall                                    | 201.6mm  | 186.8mm     |
| Number of days with rain (>1mm)                   | 7 days   | 9 days      |
| >80 <sup>th</sup> percentile (25.8mm) rain events | 2        | 2 events    |
| Flood warning / events                            | 0        | 0 events    |
| >25km/hr wind <sup>2</sup>                        | 4 days   | 19 days     |
| >50km/hr wind                                     | 3 days   | 7 days      |

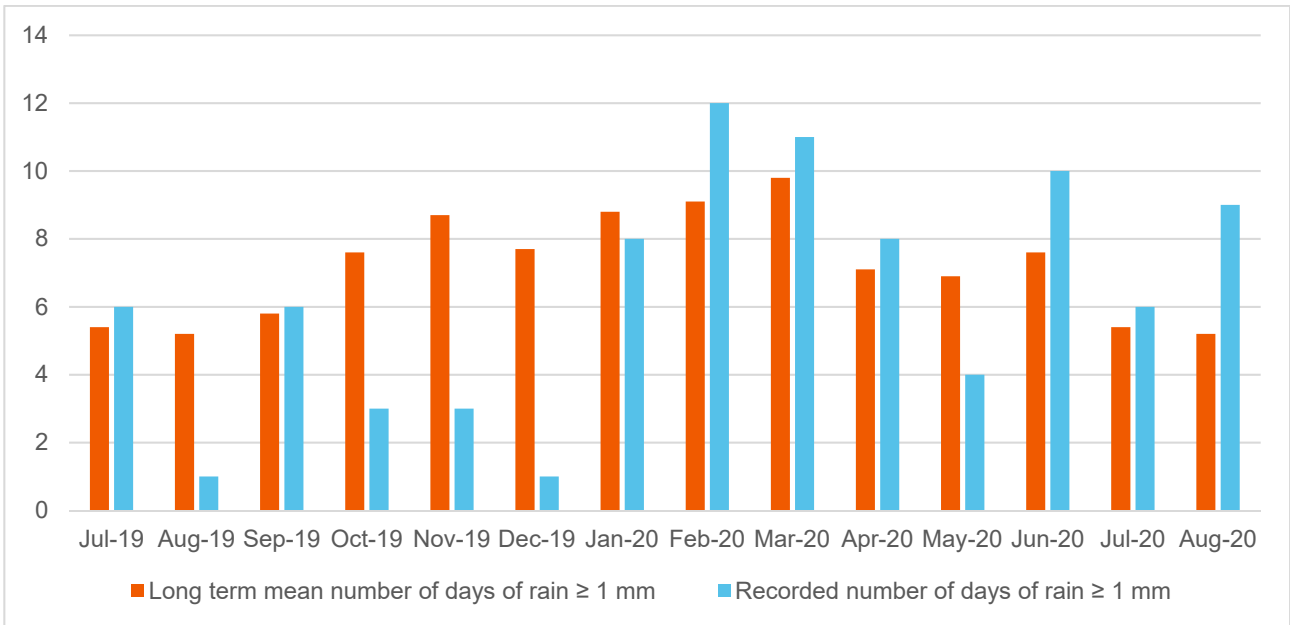
1. Weather summary based on data from the 26 July to 25 August (31 days).

2. Wind data from Sydney Olympic Park AWS (Archery Centre) {station 066212}. Weather data from Parramatta North (Masons Drive) {station 066124}.

Note: Red text in Observation column indicates observation greater than forecast.



**Figure 3-1 Monthly rainfall comparison**



**Figure 3-2 Monthly rain days comparison**

### 3.3. Noise and Vibration

**Table 3-3** provides a summary of noise monitoring events conducted during the reporting period. Detailed noise monitoring results and comments are presented in **Appendix A-2**. It is noted that recorded noise levels (Leq15min) during the reporting period were consistently below the predicted noise levels.

Additional information on the hours of works, respite requirements and alternative accommodation is provided in the Noise and Vibration Management Sub-plan (Section 11.3).

Vibration monitoring events completed during the reporting period are summarised in **Table 3-4** and detailed results and comments are presented in **Appendix A-2**. All monitoring events were compliant with vibration targets.



All noise and vibration monitors used during the reporting period, together with current NATA calibration data, is provided in **Table 3-5**.

Continuous noise and vibration monitoring was undertaken during the reporting period at medical facilities in Westmead that have been identified as sensitive receivers. In consultation with the Health Administration Corporation, monitoring will be ongoing for twelve months. Locations of the noise and vibration monitors are provided in **Table 3-6**.

**Table 3-3 Summary of noise monitoring August 2020**

| Date       | Monitoring Location   | Attended/Continuous | Description                  |
|------------|---|---------------------|------------------------------|
| 31/07/2020 | 200 George St   | Attended            | Site set up                  |
| 31/07/2020 | 1 Noller Parade   | Attended            | Saw cutting                  |
| 31/07/2020 | 200 George St   | Attended            | Saw cutting                  |
| 31/07/2020 | 1 Noller Parade   | Attended            | Saw cutting                  |
| 31/07/2020 | 1 Noller Parade/ 200 George St                                  | Attended            | Saw cutting                  |
| 4/08/2020  | 244 Church St   | Attended            | Saw cutting                  |
| 4/08/2020  | 286 Church St   | Attended            | Saw cutting                  |
| 4/08/2020  | 281 Church St   | Attended            | Saw cutting                  |
| 5/08/2020  | 325-327 Church St   | Attended            | Jackhammering                |
| 5/08/2020  | 330 Church St   | Attended            | Jackhammering                |
| 11/08/2020 | 263 Church St   | Attended            | Jackhammering                |
| 12/08/2020 | 318 Church St   | Attended            | Vac + pilling                |
| 12/08/2020 | 318 Church St   | Attended            | Pilling, vac truck + pilling |
| 12/08/2020 | 318 Church St   | Attended            | Pilling                      |
| 13/08/2020 | 295 Church St   | Attended            | Concrete pour                |
| 13/08/2020 | 295 Church St   | Attended            | Concrete pour + vac truck    |
| 17/08/2020 | 1/459 Church St   | Attended            | Jackhammering                |
| 20/08/2020 | 219-221 Church St   | Attended            | Jackhammering                |
| 20/08/2020 | 224 Church St   | Attended            | Jackhammering                |
| 20/08/2020 | Westmead Institute for Medical Research (Sleep Lab)             | Continuous          | General construction         |
| 20/08/2020 | Westmead Institute for Medical Research (Brain Dynamics Centre) | Continuous          | General construction         |



| Date       | Monitoring Location                                     | Attended/Continuous | Description          |
|------------|---|---------------------|----------------------|
| 26/06/2020 | Children's Medical Research Institute (Microscopy Labs) | Continuous          | General construction |
| 26/06/2020 | Cumberland Hospital (Clinical psychology rooms)         | Continuous          | General construction |

**Table 3-4 Summary of vibration monitoring August 2020**

| Date       | Monitoring Location                                       | Attended/Continuous | Description          |
|------------|---|---------------------|----------------------|
| 20/08/2020 | 495 Church St   | Attended            | Jackhammer           |
| 19/08/2020 | Barrack Lane  | Attended            | Roller               |
| 20/08/2020 | Barrack Lane  | Attended            | Roller               |
| 21/08/2020 | Camellia Bridge   | Attended            | Pilling              |
| 16/06/2020 | Westmead Institute for Medical Research (HAL incubators)  | Continuous          | General construction |
| 16/06/2020 | Westmead Institute for Medical Research (Microscopy Labs) | Continuous          | General construction |
| 16/06/2020 | Children's Medical Research Institute (Microscopy Labs)   | Continuous          | General construction |

**Table 3-5 Noise and Vibration Monitors and NATA Calibration**

| Equipment <sup>1</sup> | Serial Number | Calibration Date |
|------------------------|---------------|------------------|
| Noise Level Meter      | 00973277      | 4/12/2020        |
| Noise Level Meter      | 00661732      | 19/05/2021       |
| Vibration Monitor      | BE14639       | 5/12/2020        |

<sup>1</sup>Continuous monitoring equipment installed at the Westmead Institute for Medical Research and the Children's Medical Research Institute is owned and operated by Renzo Tonin.

**Note:** The calibration of the monitoring equipment is checked in the field before and after the noise measurement period per Standards Australia AS/IEC 60942:2004/IEC 60942:2003–Electroacoustic – Sound Calibrators.

**Table 3-6 HAC Noise and Vibration Monitor Locations**

| Monitor Type                         | Organisation      | Location              |
|--------------------------------------|-------------------|-----------------------|
| Westmead Institute for Medical Reach | Vibration Monitor | HAL incubators        |
|                                      |                   | Microscopy Labs       |
|                                      | Noise Monitor     | Sleep Lab             |
|                                      |                   | Brain Dynamics Centre |



| Monitor Type                          | Organisation      | Location                  |
|---------------------------------------|-------------------|---------------------------|
| Children's Medical Research Institute | Vibration Monitor | Microscopy Labs           |
|                                       | Noise Monitor     | Labs (Level 1)            |
| Cumberland Hospital                   | Noise Monitor     | Clinical psychology rooms |

## 3.4. Soil and Water

### 3.4.1. Water quality (turbidity) in receiving waters

Water quality monitoring is based upon on pre-construction screening to verify the water quality objectives established on the baseline data presented in the EIS Technical Paper 6 – Water Quality Assessment.

During the reporting period, two wet weather monitoring events were undertaken as summarised in Table 3-6 and detailed in Table A-3-1. Monitoring was undertaken following a 120.6 mm rain event that occurred from 26 July 2020 to 28 July 2020. Water levels were higher than usual and minimal debris was present in all waterways when sampling. The second monitoring event occurred from 8 August 2020 to 16 August 2020 resulting in 66.2mm of rainfall prior to sampling.

As detailed in Table A-3-1, a number of exceedances were recorded against the project's water quality objectives. However, it is noted that where exceedances occurred, the downstream result was generally consistent with upstream result. An exception was noted in relation to monitoring of Vineyard Creek where an exceedance was noted with respect to the downstream turbidity result. In response, a review was undertaken of erosion and sediment controls at the site. All embankments are covered with geofabric to minimise the risk of off-site movement of sediment during high rainfall events. The adequacy of ground cover will be inspected prior to each rainfall event to minimise the risk of increased turbidity.

**Table 3-6 Water quality (turbidity) in receiving waters**

| Date       | Type                           | Type of Results | Wet / Dry | Locations  |
|------------|--------------------------------|-----------------|-----------|--|
| 28/07/2020 | Monitoring during construction | Probe           | Wet       | Parramatta River: PR1; PR3; PR4; PR5; PR6<br>Domain Creek: DC1<br>Clay Cliff Creek: CC2<br>Vineyard Creek: VY1; VY2<br>Subiaco Creek: SC1<br>A'becketts Creek: AC1, AC2      |
| 11/08/2020 | Monitoring during construction | Probe           | Wet       | Parramatta River: PR1; PR3; PR4; PR5; PR6<br>Domain Creek: DC1<br>Clay Cliff Creek: CC1, CC2<br>Vineyard Creek: VY1; VY2<br>Subiaco Creek: SC1<br>A'becketts Creek: AC1, AC2 |

Monitoring locations PR2 and CC1 were not sampled during the 28 July 2020 monitoring event as the sites were inaccessible.



**Table 3-7 Water Monitor Calibration**

| Equipment <sup>1</sup> | Serial Number | Calibration Date |
|------------------------|---------------|------------------|
| Water Quality Monitor  | DV7F6E7J      | 12/08/2020       |

<sup>1</sup> All equipment is calibrated by NATA standards.

### 3.4.2. Discharge and dewatering

Detailed water quality (turbidity) monitoring results and comments for August 2020 are presented in **Appendix A-3-2**.

There were eight discharge events during the reporting period. In addition, data from a discharge event which occurred during the previous reporting period at Arthur Street compound has been included.

### 3.4.3. Dust Deposition Monitoring

A dust deposition gauge was installed at 13A Grand Avenue in Camellia in December 2019 in advance of works which commenced at the beginning of February 2020. Baseline data indicated that the value of Total Insoluble Matter (TIM) was 3.9 g/m<sup>2</sup> before the commencement of construction activities at 13A Grand Avenue.

During the reporting period, an additional dust deposition gauge was installed at Carlingford Station. The dust monitoring results for the August 2020 reporting period are yet to be received.

Monitoring results indicate a significant increase in dust deposition during the month of July at 13a Grand Avenue and Rydalmere Station (Table 3-7). The increase is attributed to the movement and disposal of stockpiled material at 13A Grand Avenue, stockpiling adjacent to the dust deposition gauge at Rydalmere Station and above average wind speeds during the reporting period.

In response, the following corrective actions have been implemented:

- Review of site management practices
- Reinforcement of critical controls with Supervisors (e.g. covering of stockpiles)
- Increase in use of ground cover.

In addition to the above, a Toolbox talk will be delivered to all workers on dust mitigation, including stockpile management, ground cover, use of water carts and daily visual inspections.

**Table 3-7 Summary of dust deposition data**

| Date       | Monitoring Location | Total Insoluble Matter g/m <sup>2</sup> /month |
|------------|---------------------|--|
| 20/01/2020 | 13a Grand Avenue    | 3.9  |
| 24/03/2020 | 13a Grand Avenue    | 4  |
| 27/04/2020 | 13a Grand Avenue    | 4.1  |
| 28/05/2020 | 13a Grand Avenue    | 4.9  |
| 26/06/2020 | 13a Grand Avenue    | 3.5  |
| 26/07/2020 | 13a Grand Avenue    | 12   |
| 26/07/2020 | Rydalmere Station   | 21.7   |



| <b>Date</b> | <b>Monitoring Location</b> | <b>Total Insoluble Matter g/m<sup>2</sup>/month</b> |
|-------------|----------------------------|---|
| 26/07/2020  | Dundas Station             | 0.7   |
| August      | 13a Grand Avenue           | -   |
| August      | Rydalmere Station          | -   |
| August      | Dundas Station             | -   |
| August      | Carlingford                | -   |



# Appendices

## A-1 Weather Observations

Table A-1-1 Weather observations: Parramatta North (Masons Drive) {station 066124}.

| Date       | Temps |      | Rain | Temp | RH | 9:00 AM |      |     |
|------------|-------|------|------|------|----|---------|------|-----|
|            | Min   | Max  |      |      |    | RH      | Cld  | Dir |
|            | °C    | °C   | mm   | °C   | %  | 8th     | km/h |     |
| 26/07/2020 | 9     | 15.5 | 5.6  | 13   | 99 | 8       | SW   | 2   |
| 27/07/2020 | 11.8  | 16.3 | 97   | 15.3 | 97 | 8       | SSW  | 19  |
| 28/07/2020 | 12    | 18.3 | 18   | 14.8 | 97 | 7       | SW   | 6   |
| 29/07/2020 | 7.6   | 20   | 0    | 14   | 78 | 2       | SW   | 2   |
| 30/07/2020 | 4.6   | 18.4 | 0    | 11.6 | 88 | *       | *    |     |
| 31/07/2020 | 6     | 17.7 | 0    | 12   | 71 | 0       | WSW  | 4   |
| 1/08/2020  | 4     | 20   | 0    | 10.8 | 86 | 0       | NW   | 2   |
| 2/08/2020  | 5.4   | 21   | 0    | 10.4 | 78 | 3       | SW   | 4   |
| 3/08/2020  | 4.6   | 21.8 | 0    | 10.2 | 90 | 6       | WNW  | 4   |
| 4/08/2020  | 8.2   | 21.5 | 0    | 15.4 | 60 | 1       | N    | 15  |
| 5/08/2020  | 3.8   | 17.8 | 0    | 10   | 62 | 0       | NNW  | 15  |
| 6/08/2020  | 3.2   | 16.2 | 0    | 9.5  | 68 | 2       | W    | 4   |
| 7/08/2020  | 6.2   | 14.8 | 0    | 10.7 | 86 | 8       | NE   | 2   |
| 8/08/2020  | 10    | 16.1 | 19   | 13.5 | 97 | 3       | WSW  | 2   |
| 9/08/2020  | 5.8   | 15.7 | 6.4  | 11.8 | 76 | 5       | W    | 6   |
| 10/08/2020 | 7.6   | 16.3 | 30   | 15.2 | 66 | 5       | SE   | 37  |
| 11/08/2020 | 9.3   | 17.4 | 3.4  | 12.5 | 82 | 7       | W    | 2   |
| 12/08/2020 | 7.8   | 18   | 0    | 11.6 | 97 | 8       | W    | 2   |
| 13/08/2020 | 7.8   | 22.4 | 0    | 15.5 | 79 | 0       | NW   | 2   |
| 14/08/2020 | 8     | 17.5 | 0    | 13.6 | 84 | 8       | W    | 4   |
| 15/08/2020 | 11    | 19.2 | 6    | 14.5 | 94 | 0       | NNW  | 4   |
| 16/08/2020 | 10.8  | 20   | 1.4  | 14.6 | 72 | 4       | W    | 6   |
| 17/08/2020 | 7.5   | 20   | 0    | 14.8 | 74 | 0       | W    | 6   |
| 18/08/2020 | 9.1   | 20.5 | 0    | 14.7 | 71 | 5       | NNW  | 6   |
| 19/08/2020 | 7.7   | 21.4 | 0    | 16.5 | 65 | 0       | N    | 7   |
| 20/08/2020 | 9     | 18   | 0    | 14.5 | 59 | 0       | W    | 30  |
| 21/08/2020 | 8.7   | 18.5 | 0    | 14.5 | 62 | 2       | W    | 9   |
| 22/08/2020 | 7.5   | 15   | 0    | 12   | 65 | 4       | NW   | 15  |
| 23/08/2020 | 7.2   | 16.7 | 0    | 13.5 | 58 | 0       | SW   | 19  |
| 24/08/2020 | 3.8   | 18.3 | 0    | 12   | 59 | 0       | W    | 9   |





25/08/2020 1.7 16.5 0 11 64 1 WSW 7

Table A-1-2 Wind observations: Sydney Olympic Park AWS (Archery Centre) {station 066212}.

| Date       | Max Wind Gust |      |       | 9:00 AM |      | 3:00 PM |      |
|------------|---------------|------|-------|---------|------|---------|------|
|            | Dir           | Spd  | Time  | Dir     | Spd  | Dir     | Spd  |
|            |               | km/h | local |         | km/h |         | km/h |
| 26/07/2020 | SE            | 46   | 19:45 | *       | Calm | SE      | 6    |
| 27/07/2020 | SSW           | 44   | 1:29  | WSW     | 13   | WSW     | 13   |
| 28/07/2020 | SW            | 37   | 14:12 | WSW     | 7    | SW      | 13   |
| 29/07/2020 | E             | 24   | 14:16 | W       | 7    | SE      | 11   |
| 30/07/2020 | SSE           | 31   | 15:25 | WNW     | 9    | SSE     | 17   |
| 31/07/2020 | SSW           | 19   | 9:04  | W       | 6    | SSE     | 6    |
| 1/08/2020  | NNW           | 24   | 11:52 | NW      | 6    | NW      | 4    |
| 2/08/2020  | NW            | 17   | 10:52 | NW      | 9    | ENE     | 4    |
| 3/08/2020  | NNW           | 19   | 14:59 | NW      | 11   | NNW     | 9    |
| 4/08/2020  | NW            | 39   | 15:17 | *       | Calm | WNW     | 11   |
| 5/08/2020  | WNW           | 33   | 14:38 | NNW     | 17   | WNW     | 19   |
| 6/08/2020  | WNW           | 31   | 0:04  | NW      | 13   | ESE     | 13   |
| 7/08/2020  | E             | 15   | 13:55 | NW      | 4    | WNW     | 2    |
| 8/08/2020  | NNW           | 26   | 12:30 | NW      | 13   | WNW     | 6    |
| 9/08/2020  | NW            | 50   | 18:53 | NW      | 11   | W       | 15   |
| 10/08/2020 | SE            | 56   | 13:09 | SSE     | 26   | S       | 20   |
| 11/08/2020 | SW            | 20   | 2:59  | WSW     | 7    | N       | 4    |
| 12/08/2020 | NNW           | 20   | 11:53 | *       | Calm | *       | Calm |
| 13/08/2020 | NW            | 24   | 12:15 | *       | Calm | WSW     | 7    |
| 14/08/2020 | NW            | 15   | 9:38  | WNW     | 6    | *       | Calm |
| 15/08/2020 | WNW           | 39   | 12:04 | WNW     | 9    | W       | 19   |
| 16/08/2020 | WNW           | 44   | 16:08 | WNW     | 15   | W       | 22   |
| 17/08/2020 | WNW           | 35   | 10:24 | NW      | 11   | W       | 11   |
| 18/08/2020 | WNW           | 39   | 12:23 | NW      | 15   | NW      | 6    |
| 19/08/2020 | NW            | 61   | 15:08 | N       | 15   | WNW     | 24   |
| 20/08/2020 | WNW           | 54   | 14:35 | NW      | 17   | WNW     | 24   |
| 21/08/2020 | WNW           | 57   | 13:33 | NW      | 19   | WNW     | 22   |
| 22/08/2020 | NW            | 50   | 14:47 | NW      | 15   | WNW     | 24   |
| 23/08/2020 | NW            | 56   | 12:53 | WNW     | 15   | WNW     | 20   |
| 24/08/2020 | WNW           | 30   | 8:44  | W       | 13   | W       | 9    |
| 25/08/2020 | SSE           | 22   | 14:20 | W       | 7    | SSE     | 13   |

Notes:

Blue text indicates a rain event greater than 1mm of rain.



The orange text indicates a rain event greater than the 80<sup>th</sup> percentile of 25.8mm, and a wind speed of greater than 25km/hr  
Red text indicates a rain event greater than the 85<sup>th</sup> percentile of 33.1mm, and a wind speed greater than 50km/hr.

\* Data was unavailable.



## **A-2 Noise and Vibration Monitoring Results**

Table A-2-1 Noise monitoring results

| Date       | Time  | Works Period   | Construction Activity        | Activity Location    | Monitoring Location            | NML (dBA) | Predicted (dBA) | Additional Mitigation Measures | L <sub>Amax</sub> | Recorded L <sub>eq, 15min</sub> (dBA) | Exceedance of Predicted (dBA) | Exceedance of predicted | Comments  |
|------------|-------|----------------|------------------------------|----------------------|--------------------------------|-----------|-----------------|--------------------------------|-------------------|---------------------------------------|-------------------------------|-------------------------|---|
| 31/07/2020 | 20:57 | OOHW Period 1  | Site set up                  | Noller Pde/George St | 200 George St                  | 45        | 68              | PN, V, RP                      | 72.9              | 54.9                                  | -13.1                         | No                      | <b>Construction noise is dominant noise source</b><br>Site set up included construction of ATF fences, traffic control, noise barriers and blankets.  |
| 31/07/2020 | 21:16 | OOHW Period 1  | Saw cutting                  | Noller Pde/George St | 1 Noller Parade                | 45        | 79              | PN, V, RP                      | 66.0              | 48.8                                  | -30.2                         | No                      | <b>Construction noise is sometimes audible</b><br>1:30 into monitoring loud car exhaust on Victoria Rd (70dB).<br>Main noise is vehicle noise from Vic Rd and cockatoos (47dB).<br>5:40 mins into monitoring fire engines in background.  |
| 31/07/2020 | 21:46 | OOHW Period 1  | Saw cutting                  | Noller Pde/George St | 200 George St                  | 45        | 84              | PN, V, RP                      | 74.5              | 68.8                                  | -15.2                         | No                      | <b>Construction noise is dominant noise source</b><br>Saw cutting 68-71dB.<br>Saw cutting continuous throughout monitoring.   |
| 31/07/2020 | 21:16 | OOHW Period 1  | Saw cutting                  | Noller Pde/George St | 1 Noller Parade                | 39        | 95              | PN, V, RP                      | 48.5              | 56.2                                  | -38.8                         | No                      | <b>Construction noise is sometimes audible</b><br>Saw cutting 60-63dB.<br>Saw cutting off 48-49dB.<br>10 mins into monitoring cars passing and people walking.  |
| 31/07/2020 | 22:32 | OOHW Period 2  | Saw cutting                  | Noller Pde/George St | 1 Noller Parade/ 200 George St | 39        | 68              | PN, V, RP                      | 78.9              | 62.8                                  | -5.2                          | No                      | <b>Construction noise is dominant noise source</b><br>5 mins into monitoring, truck reversing with squawker.<br>6 mins into monitoring, truck loading out.<br>12:35 mins into monitoring, scraping road with bucket.  |
| 4/08/2020  | 14:59 | Standard Hours | Saw cutting                  | 244 Church St        | 244 Church St                  | 70        | 94              | PN, V                          | 96.9              | 87.8                                  | -6.3                          | No                      | <b>Construction noise is dominant noise source</b><br>Monitoring the baseline levels for noise blanket scenario.  |
| 4/08/2020  | 16:22 | Standard Hours | Saw cutting                  | 286 Church St        | 286 Church St                  | 70        | 94              | PN, V                          | 90.9              | 82.7                                  | -11.3                         | No                      | <b>Construction noise is dominant noise source</b>  |
| 4/08/2020  | 16:40 | Standard Hours | Saw cutting                  | 255 Church St        | 281 Church St                  | 70        | 90              | PN, V                          | 83.9              | 73.2                                  | -16.8                         | No                      | <b>Construction noise is audible at most times</b><br>Noise without construction works 73dB.<br>Traffic light noise constant.<br>Noise from cars waiting at the stop light with no works 73dB.<br>Work noise with no cars waiting at the traffic lights 72.5dB.<br>10 mins into monitoring works stopped and monitoring was discontinued. |
| 5/08/2020  | 8:55  | Standard Hours | Jackhammering                | 337 Church St        | 325-327 Church St              | 70        | 93              | PN, V                          | 90.3              | 73.4                                  | -19.6                         | No                      | <b>Construction noise is audible at most times</b><br>Hammering stopped 12 min into monitoring and monitoring discontinued.   |
| 5/08/2020  | 8:31  | Standard Hours | Jackhammering                | 327 Church St        | 330 Church St                  | 70        | 93              | PN, V, SN                      | 89.3              | 76                                    | -17                           | No                      | <b>Construction noise is audible at most times</b><br>Jackhammering stopped 8 mins into monitoring for 3 mins.  |
| 11/08/2020 | 12:36 | Standard Hours | Jackhammering                | 263 Church St        | 263 Church St                  | 70        | 97              | PN, V                          | 94.2              | 83.9                                  | -13.1                         | No                      | <b>Construction noise is clearly audible</b><br>Original jackhammering 85dB (20m away).<br>3 min into monitoring: 2 <sup>nd</sup> jackhammer start (90dB) 10 m away from monitoring location.   |
| 12/08/2020 | 11:38 | Standard Hours | Vac + pilling                | 318 Church St        | 318 Church St                  | 70        | 96              | PN, V                          | 103               | 77.3                                  | -12.7                         | No                      | <b>Construction noise is clearly audible</b><br>Vac truck 74dB.<br>78-80dB – 14 mins into monitoring, pilling began.<br>86dB pilled put into place.   |
| 12/08/2020 | 11:55 | Standard Hours | Pilling, vac truck + pilling | 318 Church St        | 318 Church St                  | 70        | 96              | PN, V                          | 103               | 79.5                                  | -16.5                         | No                      | <b>Construction noise is clearly audible</b><br>102dB pilling bang.<br>74dB with vac truck running (no pilling).<br>6:30 mins into monitoring, jackhammering begins (80dB) and occurs for 1 min.<br>8 mins into monitoring jackhammering begins again (80-84dB), 40m from monitoring location.  |

|            |                       |                    |                           |   |                   |    |    |           |       |      |       |    |   |
|------------|-----------------------|--------------------|---------------------------|---|-------------------|----|----|-----------|-------|------|-------|----|---|
| 12/08/2020 | 12:16                 | Standard Hours     | Pilling                   | 318 Church St   | 318 Church St     | 70 | 96 | PN, V     | 108.9 | 82   | -14   | No | Whacker packer begins 11:30 mins into monitoring starts 10m from monitoring (85dB).<br><b>Construction noise is clearly audible</b><br>Pilling bang 101dB.<br>Jackhammer in background 76-85dB 40m away.<br>2:30 mins into monitoring people yelling 85dB.<br>Pilling 82dB 5 mins into monitoring.<br>Pilling bang 104dB. |
| 13/08/2020 | 12:19                 | Standard Hours     | Concrete pour             | 295 Church St   | 295 Church St     | 70 | 82 | PN, V     | 90.8  | 73.9 | -34.1 | No | <b>Construction noise is clearly audible</b><br>Concrete pour 74dB stops 4:30 into monitoring for 6:30 mins.  |
| 13/08/2020 | 11:55                 | Standard Hours     | Concrete pour + vac truck | 295 Church St   | 295 Church St     | 70 | 82 | PN, V     | 95.7  | 80.7 | -27.3 | No | <b>Construction noise is dominant noise source</b><br>Vac truck 84dB stops 8:30 into monitoring.<br>Concrete pour begins 8:30 into monitoring 77dB and stops 11 mins into monitoring.   |
| 17/08/2020 | 22:10                 | OOHW Period 2      | Jackhammering             | Albert St & Church St corner                                    | 1/459 Church St   | 50 | 61 | PN, V, SN | 62.3  | 41.7 | -8.3  | No | <b>Construction noise is dominant noise source</b>  |
| 20/08/2020 | 9:23                  | Standard Hours     | Jackhammering             | 240 Church St   | 219-221 Church St | 70 | 96 | PN, V     | 96    | 96.6 | -14.4 | No | <b>Construction noise is dominant noise source</b><br>9 mins into monitoring hammering stops for 2 mins.  |
| 20/08/2020 | 9:23                  | Standard Hours     | Jackhammering             | 240 Church St   | 224 Church St     | 70 | 96 | PN, V     | 101.8 | 90.5 | -5.5  | No | <b>Construction noise is dominant noise source</b><br>Hammering 88-94dB.  |
| 26/06/2020 | Continuous monitoring | Construction works | Hawkesbury Road works     | Westmead Institute for Medical Research (Sleep Lab)             | 40                | *  | *  | *         | *     | *    | *     | No | Activities are reviewed in response to exceedance alerts. Where the exceedance is attributed to construction, a review is undertaken of works and plant/equipment or methodology is modified where necessary.   |
| 26/06/2020 | Continuous monitoring | Construction works | Hawkesbury Road works     | Westmead Institute for Medical Research (Brain Dynamics Centre) | 60                | *  | *  | *         | *     | *    | *     | No |   |
| 26/06/2020 | Continuous monitoring | Construction works | Hawkesbury Road works     | Children's Medical Research Institute (Microscopy Labs)         | 60                | *  | *  | *         | *     | *    | *     | No |   |
| 26/06/2020 | Continuous monitoring | Construction works | Cumberland Hospital       | Cumberland Hospital (Clinical psychology rooms)                 | 60                | *  | *  | *         | *     | *    | *     | No |   |

Notes:

**Standard hours:**

- All areas excluding Eat Street and Camellia – Monday to Friday 7:00 am to 7:00 pm. Saturday 8:00 am to 6:00 pm
- Eat Street (Church Street between Palmer Street and George Street) – Monday to Friday 7:00 am to 6:00 pm. Saturday 8:00 am to 12:00 pm)
- Camellia, Rosehill and Rydalmere (east of James Ruse Drive to Victoria Road) – 24 hours a day and seven days a week provided that sensitive receivers are not affected by noise levels of greater than 5 dBA above the rating background level at any residence

**OOHW Period 1** is defined as:

- 6:00pm to 10:00pm (evenings) Monday to Saturday
- 7:00am to 8:00am and 1:00pm to 10:00pm (day & evening) Saturday and
- 8:00am to 6:00pm Sunday and public holidays (days).

**OOHW Period 2** is defined as:

- 10:00pm to 7:00am (nights) Monday to Saturday and
- 6:00pm to 8:00am (nights) Sundays and public holidays.

**Additional Mitigation Measures**

- PN = Project Notification
- V = Verification Monitoring
- RP = Respite Period
- AA = Alternate Accommodation
- SN = Specific Notification / individual briefing or phone call
- DR = Duration Reduction
- RO = Project Specific Respite Offer

**Table A-2-2 Vibration monitoring results**

| Date       | Time        | Works Period          | Construction Activity | Activity Location | Monitoring Location                                       | Trigger Value | Recorded PVS (Max values) | Exceedance of Target | Construction vibration exceedance | Comments  |
|------------|-------------|-----------------------|-----------------------|-------------------|---|---------------|---------------------------|----------------------|-----------------------------------|---|
| 20/08/2020 | 12:01-12:06 | Standard work hours   | Jackhammer            | 495 Church St     | 495 Church St   | 7.5 mm/s      | 4.06 mm/s                 | No                   | No                                | 5t Excavator, with a 3t jackhammer attachment, to assess safe distance from locally listed heritage building 495 Church Street.   |
| 19/08/2020 | 08:12-16:09 | Standard work hours   | Roller                | Barrack Lane      | Barrack Lane  | 7.5 mm/s      | 3.365 mm/s                | No                   | No                                | No comment  |
| 20/08/2020 | 08:29-10:49 | Standard work hours   | Roller                | Barrack Lane      | Barrack Lane  | 7.5 mm/s      | 3.178 mm/s                | No                   | No                                | No comment  |
| 21/08/2020 | 15:16-15:36 | Standard work hours   | Pilling               | Camellia Bridge   | Camellia Bridge   | 7.5 mm/s      | 7.1 mm/s                  | No                   | No                                | Pilling adjacent to bridge.   |
| 26/06/2020 |             | Continuous monitoring | Hawkesbury Road works | Hawkesbury Road   | Westmead Institute for Medical Research (HAL incubators)  | 0.1 mm/s      | *                         | No                   | No                                | Activities are reviewed in response to exceedance alerts. Where the exceedance is attributed to construction, a review is undertaken of works and plant/equipment or methodology is modified where necessary. |
| 26/06/2020 |             | Continuous monitoring | Hawkesbury Road works | Hawkesbury Road   | Westmead Institute for Medical Research (Microscopy Labs) | 0.1 mm/s      | *                         | No                   | No                                |   |
| 26/06/2020 |             | Continuous monitoring | Hawkesbury Road works | Hawkesbury Road   | Children's Medical Research Institute (Microscopy Labs)   | 0.1 mm/s      | *                         | No                   | No                                |   |

## A-3 Water Sampling and Discharge Results

Table A-3-1 Water Quality Monitoring - Comments and observations


| Location | Waterway         | Upstream/<br>Downstream of<br>works | Type | Date       | Time  | pH<br>5.5-8.5 <sup>2</sup> | Elec. Conduct.<br>(µS/cm)<br>LR <sup>1</sup> : 125-2200 <sup>2</sup><br>E: None | Turbidity<br>(NTU)<br>6-50 <sup>2</sup> | Comments and observations  |
|----------|------------------|-------------------------------------|------|------------|-------|----------------------------|---|---|--|
| PR1      | Parramatta River | Upstream                            | Wet  | 28/07/2020 | 10:00 | 8.05                       | 333   | 47.7                                    | Raining. Normal current. No leaf litter. No oil or grease. Rubbish. Water murky. 120.6mm of rainfall within 3 days.  |
| DC1      | Domain Creek     | N/A                                 | Wet  | 28/07/2020 | 10:08 | 7.37                       | 208   | 39.3                                    | Raining. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| PR3      | Parramatta River | Upstream                            | Wet  | 28/07/2020 | 10:20 | 8.79                       | 493   | 50.8                                    | Raining. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| PR4      | Parramatta River | Downstream                          | Wet  | 28/07/2020 | 9:40  | 8.79                       | 493   | 16.69                                   | Cloudy. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| PR5      | Parramatta River | N/A                                 | Wet  | 28/07/2020 | 12:02 | 7.62                       | 285   | 62.5                                    | Cloudy. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| PR6      | Parramatta River | N/A                                 | Wet  | 28/07/2020 | 11:15 | 7.5                        | 460   | 61.4                                    | Cloudy. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| VY1      | Vineyard Creek   | Upstream                            | Wet  | 28/07/2020 | 10:05 | 7.25                       | 515   | 106                                     | Cloudy. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| VY2      | Vineyard Creek   | Downstream                          | Wet  | 28/07/2020 | 10:05 | 7.21                       | 513   | 104                                     | Cloudy. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| CC2      | Clay Cliff Creek | Downstream                          | Wet  | 28/07/2020 | 13:20 | 8.06                       | 561   | 38.2                                    | Cloudy. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.   |
| AC1      | A'beckets Creek  | Upstream                            | Wet  | 28/07/2020 | 12:20 | 7.84                       | 544   | 26.6                                    | Cloudy. Normal current. Minimal leaf litter. No oil or grease. Rubbish. Water murky. 120.6mm of rainfall within 3 days.  |
| AC2      | A'beckets Creek  | Downstream                          | Wet  | 28/07/2020 | 12:50 | 7.93                       | 550   | 26.1                                    | Cloudy. Normal current. Lots of leaf litter. No oil or grease. Lots of rubbish. Water murky. 120.6mm of rainfall within 3 days.  |
| SC1      | Subiaco Creek    | N/A                                 | Wet  | 28/07/2020 | 11:00 | 7.61                       | 353   | 69.2                                    | Raining. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 120.6mm of rainfall within 3 days.  |
| PR1      | Parramatta River | Upstream                            | Wet  | 11/08/2020 | 13:27 | 7.7                        | 386   | 23.3                                    | Sunny. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.  |
| DC1      | Domain Creek     | N/A                                 | Wet  | 11/08/2020 | 13:38 | 7.64                       | 401   | 17.3                                    | Sunny. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.  |
| PR3      | Parramatta River | Upstream                            | Wet  | 11/08/2020 | 13:15 | 7.68                       | 390   | 34.8                                    | Sunny. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.  |
| PR4      | Parramatta River | Downstream                          | Wet  | 11/08/2020 | 13:50 | 35.1                       | 355   | 35.1                                    | Sun with clouds. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.  |
| PR5      | Parramatta River | N/A                                 | Wet  | 11/08/2020 | 16:15 | 7.84                       | 4900  | 22.4                                    | Cloudy. Normal current. Leaf litter. No oil or grease. Minimal rubbish. Water murky. 58.8mm of rainfall within 4 days.   |
| PR6      | Parramatta River | N/A                                 | Wet  | 11/08/2020 | 14:15 | 7.54                       | 2350  | 36.2                                    | Sun/clouds. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.   |
| VY1      | Vineyard Creek   | Upstream                            | Wet  | 11/08/2020 | 14:00 | 7.85                       | 181   | 20.8                                    | Sun with Clouds. Normal current. Yes, a few debris and lots of leaf litter was banked up behind a log. No oil or grease. Minimal rubbish. Water murky. 58.8mm of rainfall within 4 days. |
| VY2      | Vineyard Creek   | Downstream                          | Wet  | 11/08/2020 | 14:05 | 7.21                       | 513   | 104                                     | Cloudy. Normal current. Minimal leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.  |
| CC1      | Clay Cliff Creek | Upstream                            | Wet  | 11/08/2020 | 16:10 | 8.55                       | 866   | 14.9                                    | Cloudy. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.   |
| CC2      | Clay Cliff Creek | Downstream                          | Wet  | 11/08/2020 | 16:00 | 8.64                       | 924   | 18.3                                    | Cloudy. Normal current. Leaf litter. No oil or grease. Rubbish. Pallets and a trolley downstream. Water murky. 58.8mm of rainfall within 4 days.   |
| AC1      | A'beckets Creek  | Upstream                            | Wet  | 11/08/2020 | 15:55 | 8.04                       | 851   | 19.5                                    | Sun. Normal current. Leaf litter. No oil or grease. Minimal rubbish. Water murky. 58.8mm of rainfall within 3 days.  |
| AC2      | A'beckets Creek  | Downstream                          | Wet  | 11/08/2020 | 15:40 | 7.84                       | 852   | 17.3                                    | Sun. Normal current. Minimal leaf litter. No oil or grease. Rubbish, but much less than last time. Water murky. 58.8mm of rainfall within 4 days.  |
| SC1      | Subiaco Creek    | N/A                                 | Wet  | 11/08/2020 | 14:15 | 7.68                       | 565   | 18.5                                    | Sun. Normal current. No leaf litter. No oil or grease. No rubbish. Water murky. 58.8mm of rainfall within 4 days.  |

1. ANZECC Waterway types: LR: Lowland River (PR1, PR2, PR3, PR4, DC1, CC1, CC2, VY1 and VY2); E: Estuary (PR5, PR6 and SC1).

2. Trigger values were established by Parramatta Connect within the Pre-Construction Sampling (Baseline Review) Water Quality Monitoring Report (PLR1INF-CPBD-ALL-WA-RPT-000003). Red text indicates values outside of the baseline trigger values.

Table A-3-2 Discharge water quality

| Discharge monitoring Point ID | Type of Monitoring Point       | Type of Discharge Point | Date       | Discharge Permit # | Oil and Grease<br>(Not visible) | pH<br>(6.5 - 8.5) | Total Suspended Solids<br>(31 mg/L) | Comments   |
|-------------------------------|--------------------------------|-------------------------|------------|--------------------|---------------------------------|-------------------|-------------------------------------|--|
| A3.20                         | Basins and settling containers | Stormwater inlet        | 19/05/2020 | DW-A3_005          | Not visible                     | 7.62              | 20                                  | Discharge into Clay Cliff Creek at Camellia / Parramatta, which flows towards Parramatta River |
| A3.22                         | Basins and settling containers | Stormwater inlet        | 29/07/2020 | DW-A3_009          | Not Visible                     | 7.31              | 2                                   | Discharge from sediment basin  |
| A3.23                         | Basins and settling containers | Stormwater inlet        | 12/08/2020 | DW-A3_010          | Not Visible                     | 8.41              | 13                                  | Discharge from Pedestrian Holding Pond   |



|                            |                                |                  |            |           |             |      |    |  |
|----------------------------|--------------------------------|------------------|------------|-----------|-------------|------|----|--|
| A3.4                       | Basins and settling containers | Stormwater inlet | 14/08/2020 | DW-A3_011 | Not Visible | 7.60 | 18 | Discharge from sediment basin                                    |
| A.25                       | Basins and settling containers | Stormwater inlet | 14/08/2020 | DW-A3_012 | Not Visible | 7.84 | 18 | Discharge from sediment basin                                    |
| A3.22                      | Basins and settling containers | Stormwater inlet | 17/08/2020 | DW-A3_013 | Not Visible | 7.79 | 16 | Discharge from sediment basin                                    |
| A2.09, A2.11, A2.12, A2.29 | Basins and settling containers | Stormwater inlet | 14/08/2020 | DW-A2_030 | Not Visible | 7.93 | 21 | Discharge from water filled barriers (filled with potable water) |
| A2.07, A2.08               | Basins and settling containers | Stormwater inlet | 07/08/2020 | DW-A2_028 | Not Visible | 7.83 | 0  | Discharge from water filled barriers (filled with potable water) |
| A2.12 A2.13                | Basins and settling containers | Stormwater inlet | 07/08/2020 | DW-A2_029 | Not Visible | 7.8  | 0  | Discharge from water filled barriers (filled with potable water) |



